

IN THE CLAIMS

1-15. (Cancelled)

16. (Original) A substantially purified nucleic acid molecule that encodes a protein comprising the amino acid sequence of SEQ ID NO: 33.

17. (Original) The substantially purified nucleic acid molecule of claim 16, wherein the nucleic acid molecule comprises the nucleic acid sequence of SEQ ID NO: 4.

18. (Original) A substantially purified nucleic acid molecule that specifically hybridizes to a nucleic acid sequence of SEQ ID NO: 4 or its complement, wherein the nucleic acid molecule encodes a protein comprising the amino acid sequence of SEQ ID NO: 33.

19. (Original) The substantially purified nucleic acid molecule according to claim 18, wherein said nucleic acid molecule specifically hybridizes to a nucleic acid sequence of SEQ ID NO: 4 or its complement under high stringency conditions.

20. (Original) The substantially purified nucleic acid molecule according to claim 18, wherein said nucleic acid molecule specifically hybridizes to a nucleic acid sequence of SEQ ID NO: 4 or its complement under low stringency conditions.

21. (Currently Amended) A substantially purified nucleic acid molecule comprising a nucleic acid sequence which encodes a plant HES 1 protein, wherein said plant HES 1 protein, when encoded by an exogenous structural nucleic acid molecule in a plant, alters phytosterol levels relative to an untransformed plant with a similar genetic background and said nucleic acid sequence has between 100% and 95% sequence identity with a nucleic acid sequence of SEQ ID NO: 4 or complement thereof.

22. – 24. (Cancelled)

25. (Currently Amended) A plant having a nucleic acid molecule which comprises: (A) a promoter region which functions in a plant cell to cause the production of a mRNA molecule; (B) an exogenous structural nucleic acid molecule encoding a protein or fragment thereof comprising ~~an amino acid sequence selected from the group consisting of SEQ ID NO: 33 and fragments thereof~~, and (C) a 3' non-translated sequence that functions in the plant cell to cause termination of transcription and addition of polyadenylated ribonucleotides to a 3' end of the mRNA molecule.

26. (Currently Amended) The plant according to claim 25, wherein said plant is selected from the group consisting of maize, canola, soybean, crambe, mustard, castor bean, peanut, sesame, cottonseed, linseed, safflower, oil palm, flax, Cuphea, rapeseed, and sunflower.

27. (Original) The plant according to claim 25, wherein said plant exhibits increased phytosterol levels relative to a plant with a similar genetic background but lacking said exogenous structural nucleic acid molecule.

28. – 29. (Cancelled)

30. (Currently Amended) A plant having an exogenous nucleic acid molecule which comprises: (A) a promoter region which functions in a plant cell to cause the production of a mRNA molecule; (B) an exogenous structural nucleic acid molecule encoding a HES 1 protein or fragment thereof, and (C) a 3' non-translated sequence that functions in the plant cell to cause termination of transcription and addition of polyadenylated ribonucleotides to a 3' end of the mRNA molecule, wherein said HES 1 protein, when encoded by an exogenous nucleic acid molecule in a plant, alters phytosterol levels relative to an untransformed plant with a similar genetic background and said nucleic acid sequence has between 100% and 95% sequence identity with a nucleic acid sequence of SEQ ID NO: 4 or complement thereof.

31. (Original) The plant according to claim 30, wherein said plant is selected from the group consisting of maize, canola, soybean, crambe, mustard, castor bean, peanut, sesame, cottonseed, linseed, safflower, oil palm, flax and sunflower.
32. (Original) The plant according to claim 31, wherein said plant exhibits increased phytosterol levels relative to a plant with a similar genetic background but lacking said exogenous structural nucleic acid molecule.
33. (Original) The plant according to claim 31, wherein said HES 1 protein has the amino acid sequence of a yeast HES 1 protein.
34. (Original) The plant according to claim 31, wherein said HES 1 protein has the amino acid sequence of a plant HES 1 protein.
35. (Original) The plant according to claim 34, wherein said HES 1 protein has the amino acid sequence of a maize or soybean HES 1 protein.
36. (Currently Amended) A method of producing a plant containing an expressed HES 1 protein ~~or fragment thereof~~ in a plant comprising: (A) transforming the plant with a functional nucleic acid molecule, wherein the functional nucleic acid molecule comprises a promoter region, wherein the promoter region is linked to a structural region, wherein the structural region comprises a nucleic acid sequence that encodes a protein ~~having~~ comprising an amino acid sequence of SEQ ID NO: 33, wherein the structural region is linked to a 3' non-translated sequence that functions in the plant to cause termination of transcription and addition of polyadenylated ribonucleotides to a 3' end of a mRNA molecule; and wherein the functional nucleic acid molecule results in overexpression of the protein; and (B) growing the transformed plant.

37. (Previously Presented) The method of producing a plant according to claim 36, wherein said plant is selected from the group consisting of maize, canola, soybean, crambe, mustard, castor bean, peanut, sesame, cottonseed, linseed, safflower, oil palm, flax and sunflower.
38. (Original) The method of producing a plant according to claim 36, wherein said plant exhibits increased phytosterol levels relative to a plant with a similar genetic background but lacking said exogenous structural nucleic acid molecule.
39. (Currently Amended) A method of producing a plant containing an expressed HES 1 protein or fragment thereof in a plant comprising: (A) transforming the plant with a functional nucleic acid molecule, wherein the functional nucleic acid molecule comprises a promoter region, wherein the promoter region is linked to a structural region, wherein the structural region comprises a nucleic acid sequence that encodes a HES 1 protein, wherein the structural region is linked to a 3' non-translated sequence that functions in the plant to cause termination of transcription and addition of polyadenylated ribonucleotides to a 3' end of a mRNA molecule; and wherein the functional nucleic acid molecule results in overexpression of the protein; and (B) growing the transformed plant, wherein said HES 1 protein, when encoded by an exogenous nucleic acid molecule in a plant, alters phytosterol levels relative to an untransformed plant with a similar genetic background and said nucleic acid sequence has between 100% and 95% sequence identity with a nucleic acid sequence of SEQ ID NO: 4 or complement thereof.
40. (Previously Presented) The method of producing a plant according to claim 39, wherein said plant is selected from the group consisting of maize, canola, soybean, crambe, mustard, castor bean, peanut, sesame, cottonseed, linseed, safflower, oil palm, flax and sunflower.

41. (Original) The method of producing a plant according to claim 40, wherein said plant exhibits increased phytosterol levels relative to a plant with a similar genetic background but lacking said exogenous structural nucleic acid molecule.

42. – 46. (Cancelled)

47. (New) A substantially purified nucleic acid molecule comprising a nucleic acid sequence having between 100% and 90% sequence identity with a nucleic acid sequence of SEQ ID NO: 4 or the complement thereof.

48. (New) The substantially purified nucleic acid molecule of claim 47, wherein said nucleic acid molecule comprises a nucleic acid sequence having between 100% and 95% sequence identity with a nucleic acid sequence of SEQ ID NO: 4 or the complement thereof.

49. (New) The substantially purified nucleic acid molecule of claim 47, wherein said nucleic acid molecule comprises a nucleic acid sequence having between 100% and 98% sequence identity with a nucleic acid sequence of SEQ ID NO: 4 or the complement thereof.

50. (New) The substantially purified nucleic acid molecule of claim 47, wherein said nucleic acid molecule comprises a nucleic acid sequence having between 100% and 99% sequence identity with a nucleic acid sequence of SEQ ID NO: 4 or the complement thereof.

51. (New) The substantially purified nucleic acid molecule of claim 47, wherein said nucleic acid molecule is a maize HES 1 protein.

52. (New) The plant according to claim 25, wherein said exogenous structural nucleic acid molecule is in the antisense orientation.